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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,123	02/17/2004	Kurt Weckstrom	3003-00043	6501
26753	7590	09/26/2006	EXAMINER	
ANDRUS, SCEALES, STARKE & SAWALL, LLP 100 EAST WISCONSIN AVENUE, SUITE 1100 MILWAUKEE, WI 53202			CHRISTENSEN, RYAN S	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/780,123

Applicant(s)

WECKSTROM, KURT

Examiner

Ryan Christensen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-9, 11-13 and 15-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-9, 11-13, 17-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2-4, 6, 8, 17, 18, 22 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 3,929,003 (Llewellyn).
4. With respect to claim 22, Llewellyn discloses an input passage for a liquid, with an input end and an output end (passage marked with liquid in and liquid out, Fig. 1), an outlet passage having a first end (4, Fig. 1) and an output end (14, Fig. 1), a wall (3, Fig. 1) formed of a gas permeable and liquid impermeable material (Col. 2, lines 25-42) separating the input and the output passages (Fig. 1) in a region along the passages and lying between the ends of the passages (Fig. 1) a first portion of the gas passing through said wall from the input passage to the output passage for discharge from the output end of the output passage as

a gas to be analyzed (gas analyzer, 16, Fig. 1 and Col. 3, lines 9-22) a second portion of gas sample (semipermeable, Col. 3, lines 34-37) and liquid remaining in the input passage for discharge from the output end of the input passage (liquid out, Fig. 1), and the output passage being formed such that the cross sectional area of the output passage taken generally transverse to a flow direction in the output passage increases in a tapered manner long the flow direction toward the output passage in at least a portion of the region along the passages (The portion of the passage leading to vacuum pump (8) is considered to be an outlet pump. There is a tapered increase in the cross sectional area in the direction of the flow at this point in the passage).

5. With respect to claim 2, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system by including the taper extending at least over half of the output passage length as a matter of design choice.
6. With respect to claims 3, 17 and 24, Llewellyn further discloses the input passage being formed such that cross sectional area of the input passage taken generally transverse to a flow direction in the input passage decreases in a tapered manner along the flow direction toward the output end of the of the input passage in at least a portion of the region along the passages (See Fig. 1. At the "liquid in" there is a passage which decreases in cross sectional area along the flow path towards the output end of the passage.)

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7. With respect to claim 4, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system by including the taper extending at least over half of the output passage length as a matter of design choice.
8. With respect to claim 6, a vacuum means is located at the output end of the output passage and is connected with out bends (8, Fig. 1).
9. With respect to claim 8, the widening portion of the output taper appears to be roughly 30 degrees (Fig. 1).
10. With respect to claim 18, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system by including the taper extending at least over half of the output passage length as a matter of design choice.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
12. Claims 2-5, 7-9, 11-13, and 17-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,054,051 (Van Reis) in view of U.S. Patent Aaltonen (4,886,528).

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13. With respect to claims 22 and 24, Van Reis discloses an input passage for a liquid (12, Fig. 1), with an input end and an output end (passage marked with liquid in and liquid out, Fig. 1), an outlet passage having a first end (14, Fig. 1) and an output end (14, Fig. 1), a wall (filtration membrane 30, Fig. 1) formed of membrane with a selected permeability (Col. 5, lines 8-26) separating the input and the output passages (Fig. 1) in a region along the passages and lying between the ends of the passages (Fig. 1) a first portion of the fluid passing through said wall from the input passage to the output passage for a second portion of the fluid sample (Col. 6, lines 47-58) and liquid remaining in the input passage for discharge from the output end of the input passage (output conduit, 44, Fig. 1), and the input passage being formed such that cross sectional area of the input passage taken generally transverse to a flow direction in the input passage decreases in a tapered manner along the flow direction toward the output end of the of the input passage in at least a portion of the region along the passages (Fig. 1 and Col. 4 line 56 to Col. 5 line 4). Van Reis also discloses an output passage being formed such that the cross section area of the output passage taken generally transverse to a flow direction in the output passage increases in a tapered manner toward the output end of the of the output passage in at least a portion of the region along the passages.
14. Van Reis does not explicitly disclose the membrane being permeable to gasses and impermeable to fluids for the purpose of separating a gas so that it may be analyzed with a gas analyzer. However, Aaltonen et al. disclose a fluid

- separation system, which can be considered a tangential flow filtration system, for separating gas from a fluid for gas analysis (abstract) using a membrane that is permeable to gas, but impermeable to the fluid (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system disclosed by Van Reis, by including a membrane permeable to gasses but impermeable to fluids for the purpose of separating a gas to be analyzed because semipermeable membranes are well known for this and Van Reis optimizes the membranes ability to select between similarly sized constituents.
15. With respect to claims 12 and 25, the taper disclosed in Fig. 1 appears to be greater than 3 degrees and less than 20 degrees. In the alternative, it would have been obvious to one of ordinary skill in the art to taper at an angle between 2 and 30 in order to achieve the uniform velocity over the membrane. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235) (CCPA 1955).
 16. With respect to claim 11, Van Reis disclose the tapered portion extending at least over half the length of the input passage (Fig. 1).
 17. With respect to claim 13, Aaltonen et al. disclose a liquid receiving means (15, Fig. 6), which is connected to the output end of the input passage (13, Fig. 6) for receiving the second portion of the gas and the liquid in the liquid receiving means (Col. 3, lines 22-29). It would have been obvious to one of ordinary skill in the art to modify the combination as applied to claim 22 by including a means for

- receiving the gas and liquid output through the inputs output passage because these reservoirs are well known in separators for gas analysis.
18. With respect to claim 22, Van Reis suggests a coaxial arrangement where the first chamber is located coaxially inside the second chamber (Col. 5, lines 18-26). Van Reis disclosed an alternative embodiment including an input passage concentrically surrounded by an outlet passage, where the input passage converges. Although not explicitly states this suggests the outlet passage having a uniform radius, meaning the output chamber increases in cross sectional area as the inner chamber converges (Col. 5, lines 18-26).
 19. With respect to claim 2, Van Reis suggests the tapering of the output portion extending over half the output passage length (Fig. 1 and Col. 5, lines 18-26).
 20. With respect to claims 3 and 17, Van Reis, discloses the input passage being formed so as to decrease in cross sectional area in the direction of flow (Fig. 1).
 21. With respect to claims 4 and 18, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system by including the taper extending at least over half of the output passage length as a matter of design choice.
 22. With respect to claim 5, Van Reis suggests placing the wall at an angular position in that the wall forms the outer boundary if the interior concentric chamber and converges in the direction of the flow (Col. 5, lines 18-26).
 23. With respect to claims 7, 20 and 21, Van Reis further discloses an alternative embodiment including a coaxial arrangement where the first chamber is located

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coaxially inside the second chamber separated by the membrane (Col. 5, lines 18-26).

24. With respect to claims 8 and 18, Van Reis does not explicitly disclose an angle for the output passage to taper. Whoever, the concentric tubular passages described in an alternative embodiment suggests that the widening of the output passage would correspond to the narrowing of the input passage. Fig. 1 discloses a narrowing of the input passage between about 30 degrees and 0.5 degrees. In the alternative, it would have been obvious to one of ordinary skill in the art to taper at an angle between 3 and 20 in order to achieve the uniform velocity over the membrane. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).
25. With respect to claims 9 and 19, Aaltonen et al. further discloses a liquid receiving means (15, Fig. 6), which is connected to the output end of the input passage (13, Fig. 6) for receiving the second portion of the gas and the liquid in the liquid receiving means (Col. 3, lines 22-29). It would have been obvious to one of ordinary skill in the art to modify the combination as applied to claim 22 by including a means for receiving the gas and liquid output through the inputs output passage because these reservoirs are well known in separators for gas analysis

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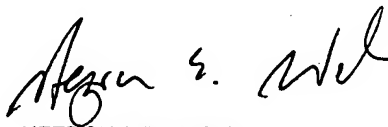
26. With respect to claim 26, Van Reis discloses divining two fluid components by using an input passage having an input end and an output end, an output passage having a first end and a second end (Fig. 1); a permeable membrane separating the two passages (30, Fig. 1 and Col. 5, lines 5-7), one part of the fluid flow through the membrane to an output end of the output passages, and another part of the fluid discharged to the output of the input passage (Fig. 1); and flowing the fluid in the passages such that the profile of the fluid velocity along at least a corresponding portion of the input passage are approximately similar (Col. 4, lines 19-33).
27. Van Reis does not explicitly disclose that the membrane be permeable to gas, but impermeable to fluid for separating a gas to be analyzed. However, Aaltonen et al. disclose a fluid separation system, which can be considered a tangential flow filtration system, for separating gas from a fluid for gas analysis (abstract) using a membrane that is permeable to gas, but impermeable to the fluid (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system disclosed by Van Reis, by including a membrane permeable to gasses but impermeable to fluids for the purpose of separating a gas to be analyzed because semipermeable membranes are well known for this and Van Reis optimizes the membranes ability to select between similarly sized constituents.

Conclusion

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28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Christensen whose telephone number is 571-272-2683. The examiner can normally be reached on Monday - Friday, 8am - 5pm.
29. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
30. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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